

IN THE CLAIMS:

Cancel claims 4, 5, 6, 8-18 and 33.

Please amend claims 1, 2, 3, 20, 25, 26, 27, 29, 35, 36, 37, 38 and 39.

Please add new claims 40, 41 and 42.

B2
Claim 1 (currently amended). Projection lens, having an object plane, having an image plane, having a lens arrangement and having at least one gas chamber filled with gas or through which gas flows, wherein the gas chamber is constructed as an at least approximately plane-parallel manipulation chamber located between the lens arrangement and the image plane, and wherein the manipulation chamber in is connected with pressure change means.

Sub C7
Claim 2 (currently amended). Projection lens, having an object plane, having an image plane, having a lens arrangement and having at least one gas chamber filled with gas or through which gas flows, wherein that the gas chamber is constructed as an at least approximately plane-parallel manipulation chamber located between the lens arrangement and the image plane, and wherein the manipulation chamber in is connected with gas composition change means.

Claim 3 (currently amended). Projection lens, having an object plane, having an image plane, having a lens arrangement and having at least one gas chamber filled with gas or through which gas flows, wherein that the gas chamber is constructed as an at least approximately plane-parallel manipulation chamber located between the lens arrangement and the image plane, and wherein the manipulation chamber in is connected with pressure change means and gas composition change means.

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Claims 4-6 (canceled)

Claim 7 (original): Projection lens according to claim 5, wherein an end plate of the lens arrangement is bipartite, and wherein the two end plate parts are arranged at a spacing from one

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another and form the manipulation chamber between them.

Claims 8-18 (canceled)

Claim 19 (currently amended). System for projection lens, having an object plane, having an image plane, having a lens arrangement and having at least one gas chamber filled with gas or through which gas flows, wherein the gas chamber is constructed as an at least approximately plane-parallel manipulation chamber formed between adjacent plane-parallel optical elements, and wherein the refractive index can be varied in the manipulation chamber by pressure changes.

Claim 20 (currently amended). System for projection lens, in particular for microlithography, having an object plane, having an image plane, having a lens arrangement and having at least one gas chamber filled with gas or through which gas flows, wherein the gas chamber is constructed as an at least approximately plane-parallel manipulation chamber, and wherein the refractive index can beis varied in the manipulation chamber by changes in gas composition.

Claim 21 (currently amended). System for projection lens, in particular for microlithography, having an object plane, having an image plane, having a lens arrangement and having at least one gas chamber filled with gas or through which gas flows, wherein the gas chamber is constructed as an at least between adjacent approximately plane-parallel optical elements to form a manipulation chamber, and wherein the refractive index can beis varied in the manipulation chamber by pressure changes and changes in gas composition.

Claim 22 (original): System for projection lens according to claim 19, wherein the offset of the refractive index can be set via the gas composition in such a way that the refractive index can be manipulated in both directions.

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Claim 23 (original): System for projection lens according to claim 20, wherein the offset of the refractive index can be set via the gas composition in such a way that the refractive index can be manipulated in both directions.

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Claim 24 (original): System for projection lens according to claim 21, wherein the offset of the refractive index can be set via the gas composition in such a way that the refractive index can be manipulated in both directions.

Claim 25 (currently amended). System for projection lens according to claim 19, wherein in addition to the manipulation chamber a further at least approximately plane-parallel manipulable gas interspace is provided, for the purpose of removing field curvature, on a substrate, which is to be exposed, in the a sixth optical group (LG6).

Claim 26 (currently amended). System for projection lens according to claim 20, wherein in addition to the manipulation chamber a further at least approximately plane-parallel manipulable gas interspace is provided, for the purpose of removing field curvature, on a substrate, which is to be exposed, in the a sixth optical group (LG6).

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Claim 27 (currently amended). System for projection lens according to claim 21, wherein in addition to the manipulation chamber a further at least approximately plane-parallel manipulable gas interspace is provided, for the purpose of removing field curvature, on a substrate, which is to be exposed, in the a sixth optical group (LG6).

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Claim 28 (currently amended). Projection exposure machine in microlithography, having a light source which outputs radiation of wavelengths shorter than 370 nm, where it comprises a projection lens according to at least one of the preceding claimsclaim 1.

Claim 29 (currently amended). Method for producing microstructured components, in the

case of which a substrate provided with a light-sensitive layer is exposed to UV light by means of a mask and a projection exposure machine with a lens arrangement, wherein an at least approximately plane-parallel manipulation chamber which is connected to a gas source is created in the projection exposure machine, and manipulating the refractive index being manipulated by pressure changes and/or changes in gas composition.

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Claim 30 (original): Method according to claim 29, wherein the manipulation chamber is installed in the projection lens on the input side of the lens arrangement or on the side of the mask.

Claim 31 (original): Method according to claim 29, wherein the manipulation chamber is installed on the output side of the lens arrangement or on the side of the wafer.

Claim 32 (original): Method according to claim 29, wherein the manipulation chamber is installed between the lens arrangement and the image plane.

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Claim 33 (canceled)

Claim 34 (original): Method according to claims 29 and 38, wherein when the projection lens is being tuned a filling gas is introduced which is subsequently exchanged by the operator for a gas mixture.

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Claim 35 (currently amended). Method A system according to claim 27, wherein provided in addition to the manipulation chamber is a further manipulable gas interspace, by means of which a field curvature on the substrate to be exposed can be removed.

Claim 36 (currently amended). Method for producing microstructured components, in the case of which a substrate provided with a light-sensitive layer is exposed by ultraviolet light by

means of a mask and a projection exposure machine according to claim 26 and, if appropriate, is structured after the development of the light-sensitive layer in accordance with a pattern included on the mask.

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Claim 37 (currently amended). Projection lens for the microlithography, having an object plane, having an image plane, having a lens arrangement and having at least one gas chamber filled with gas or through which gas flows, wherein the gas chamber is ~~constructed as an at least approximately plane-parallel manipulation chamber formed between adjacent plane-parallel optical elements~~, and wherein the manipulation chamber ~~is~~ is connected with pressure change means.

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Claim 38 (currently amended). Projection lens for the microlithography, having an object plane, having an image plane, having a lens arrangement and having at least one gas chamber filled with gas or through which gas flows, wherein the gas chamber is ~~constructed as an at least approximately between adjacent plane-parallel optical elements to form a manipulation chamber, and wherein the manipulation chamber is being connected with gas composition change means.~~

Claim 39 (currently amended). Projection lens for the microlithography, having an object plane, having an image plane, having a lens arrangement and having at least one gas chamber filled with gas or through which gas flows, wherein the gas chamber is ~~constructed as an at least between adjacent approximately plane-parallel optical elements to form a manipulation chamber, and wherein the manipulation chamber is being connected with to pressure change means and gas composition change means.~~

Please add the following new claims:

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Claim 40 (new): Projection lens, having an object plane, having an image plane, having a lens arrangement and having at least one gas chamber filled with gas or through which gas flows,

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wherein the gas chamber is constructed as an at least approximately plane-parallel manipulation chamber located in the lens arrangement and between an end plate and the lens situated adjacent to the end plate, and wherein the manipulation chamber is connected with pressure change means.

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Claim 41 (new): Projection lens, having an object plane, having an image plane, having a lens arrangement and having at least one gas chamber filled with gas or through which gas flows, wherein that the gas chamber is constructed as an at least approximately plane-parallel manipulation chamber located in the lens arrangement and between an end plate and the lens situated adjacent to the end plate, and wherein the manipulation chamber is connected with gas composition change means.

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Claim 42 (new): Projection lens, having an object plane, having an image plane, having a lens arrangement and having at least one gas chamber filled with gas or through which gas flows, wherein that the gas chamber is constructed as an at least approximately plane-parallel manipulation chamber located in the lens arrangement and between an end plate and the lens situated adjacent to the end plate, and wherein the manipulation chamber is connected with pressure change means and gas composition change means.